

LISTING OF CLAIMS

1 -35 (Cancelled).

36. (New) A device for sensing a gas comprising

a solid molded base, one side of which defines a metal frame receiving region with an insulating layer thereon;

a metal lead frame molded into the base adjacent to the insulating layer;

at least one gas sensor carried on the frame, displaced in a first direction from the insulating layer;

a second insulating layer displaced from the sensor in the first direction and overlying the sensor;

a plurality of contacts coupled to the sensor, molded into the base and extending therefrom with the first direction extending generally perpendicular to the contacts; and

a perforated cover attached to the base displaced from the sensor in the first direction .

37. (New) The device of claim 36 wherein at least one filter is located between the cover and the second insulating layer.

38. (New) The device of claim 36 wherein there are at least two gas sensors carried on the frame and the second insulating layer overlays the at least two sensors.

39. (New) The device of claim 36 wherein a metal flame arrestor mesh lies between the second insulating layer and the cover.

40. (New) The device of claim 37 wherein a metal flame arrestor mesh lies between the second insulating layer and the cover.

41. (New) The device of claim 40 wherein there are two filters located between the cover and the second insulating layer and the flame arrestor mesh lies between the two filters.

42. (New) The device of claim 36 wherein the cover comprises a metal bezel that clips onto the base.

43. (New) The device of claim 40 wherein the cover comprises a metal bezel that clips onto the base.

44. (New) The device of claim 41 wherein the cover comprises a metal bezel that clips onto the base in order to hold components such as the filter in place and to provide the device with protection and said bezel is provided with a number of holes which enables the bezel to be fastened to the housing and through which gas may enter the device with said gas passing through the bezel, the flame arrestor, both filters and at least one layer of glass insulation to reach the sensors.

45. (New) A gas sensing device comprising:

a molded flameproof plastic housing having a closed base and an open end

said housing includes an integral wall which surrounds and defines a cavity with said housing base,

said cavity has an upper first shelf and an integral cavity floor,

an all-metal electrical conducting lead frame molded with the housing and encapsulated, at least in part by the housing base,

said lead frame has first, second and third lead lines separated from each other, with the second line being located between the first and third lines,

said first, second and third lines having a first end that extends to or out of the exterior surface of the housing base,

a detector is mounted in the cavity adjacent the cavity floor and connects the first lead line with the third or second lead line,

a porous metal cover is attached to the housing open end to close the housing,

at least one filter is in the housing between the cover and the detector, and

a metal mesh flame arrestor is in the housing between the cover and the detector so that gas passes through the cover, filter and the flame arrestor before reaching the detector.

46. (New) The gas sensing device of claim 45 wherein

said cavity floor defines a first recess surrounded by a second shelf,

said first recess having a first recess floor defining at least a second recess,
said second recess containing a first element which acts as a shock absorber and insulator,
said first and third lead lines having an intermediate section extending toward the center of the housing base and toward each other and separated from each other,
said second lead line having an end being adjacent and separated from said first intermediate section,
said first recess extends to the circuit lead frame,
said second recess extends below the circuit lead frame, and
said detector is mounted in the second recess.

47. (New) The gas sensing device of claim 46 wherein

a second layer of a shock absorbing and insulating material is located inside the first recess and above the detector,

an enclosure is created by joining a metal mesh flame arrestor to the first shelf, and
said mesh flame arrestor allows the passage of gas into the cavity,

48. (New) The gas sensing device of claim 47 wherein

said at least one filter rests on the second shelf over said first recess.

49. (New) The gas sensing device of claim 48 wherein

a second filter is located on the outboard side of the flame arrestor.

50. (New) The gas sensing device of claim 40 wherein

a metal bezel clips onto the housing in order to hold components such as said second filter in place and to provide the device with protection,

the bezel is provided with a number of holes which enable the bezel to be fastened to the housing and through which gas may enter the cavity,

said gas passes through the bezel, the flame arrestor, both filters and at least one layer of insulation to reach the detector.

51. (New) The gas sensing device of claim 50 wherein the first recess floor also defines a third recess which contains a second element which acts as a shock absorber and insulator.

52. (New) The gas sensing device of claim 51 wherein the first element, second element and the second layer are glass wool.

53. (New) The gas sensing device of claim 52 wherein

said housing plastic is selected from the group consisting of polyetherimide, polyphenylsulphide and PTFE;

said lead frame is constructed from beryllium copper, with a hard acid gold plating layer, substantially 0.5 microns in thickness, over electroless nickel;

said second and third recesses extend below the circuit frame with one of these recesses surrounding the intermediate sections of the first and third leads and the other of these recesses surrounding the intermediate sections of the first and second leads;

mounted in the housing above first element and connecting respective leads is a detector and a compensator each of which comprises a metal filament encased by a porous bead;

said at least one filter is a hydrogen sulphide filter and is fabricated using a paper or glass wool filter impregnated with lead acetate;

said flame arrestor is joined around its perimeter to the top of the first shelf by means of a thermal bonding; and

the second filter is a glass fiber disc coated with Si.